



Challenges and Opportunities for 6G making a societal impact in Brazil

Prof. Rodrigo Cavalcanti

GTEL - Wireless Telecom Research Group

UFC - Federal University of Ceara, Brazil

WWRF Huddle

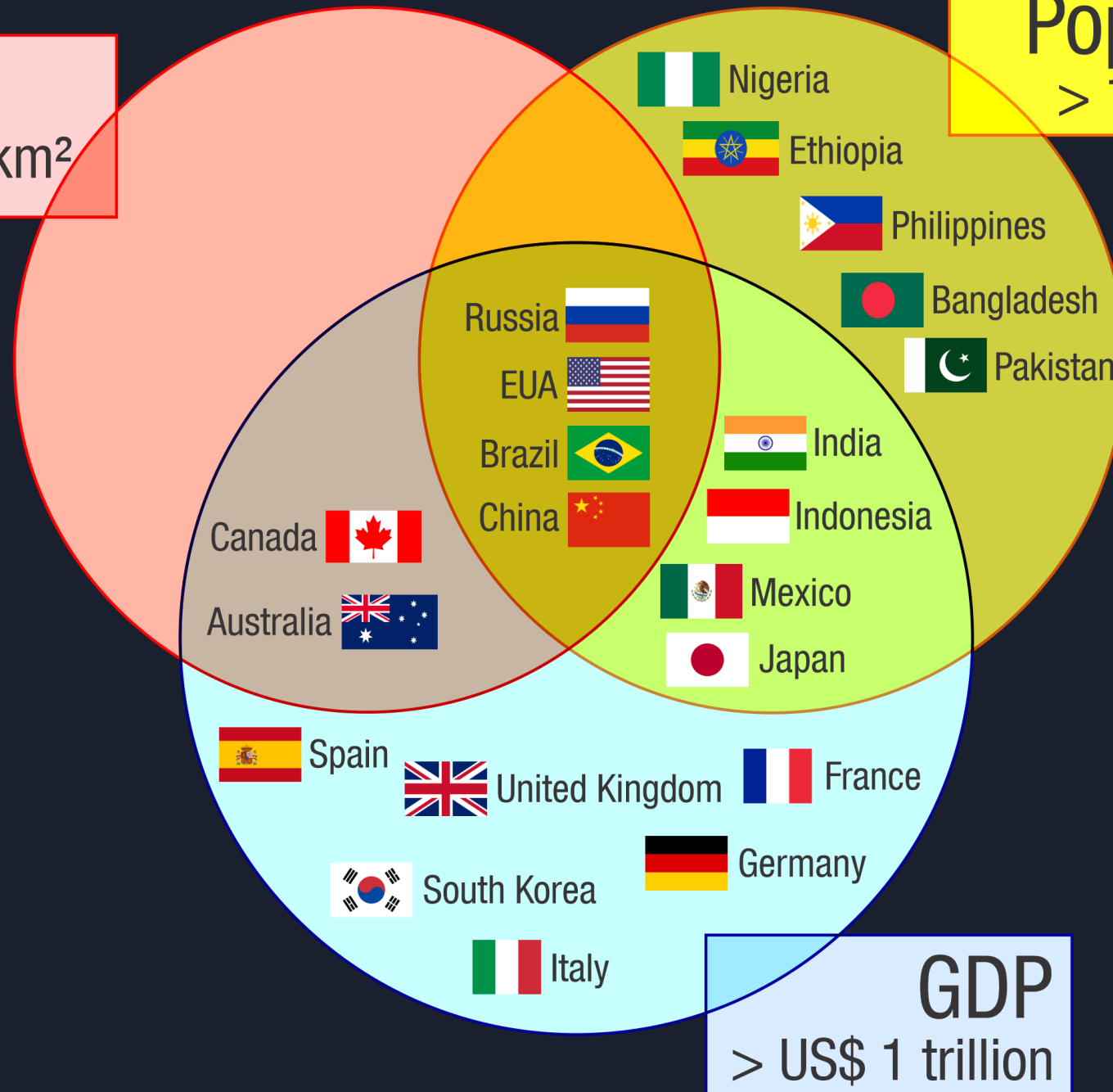
September, 2025

Context – Brazil in the World

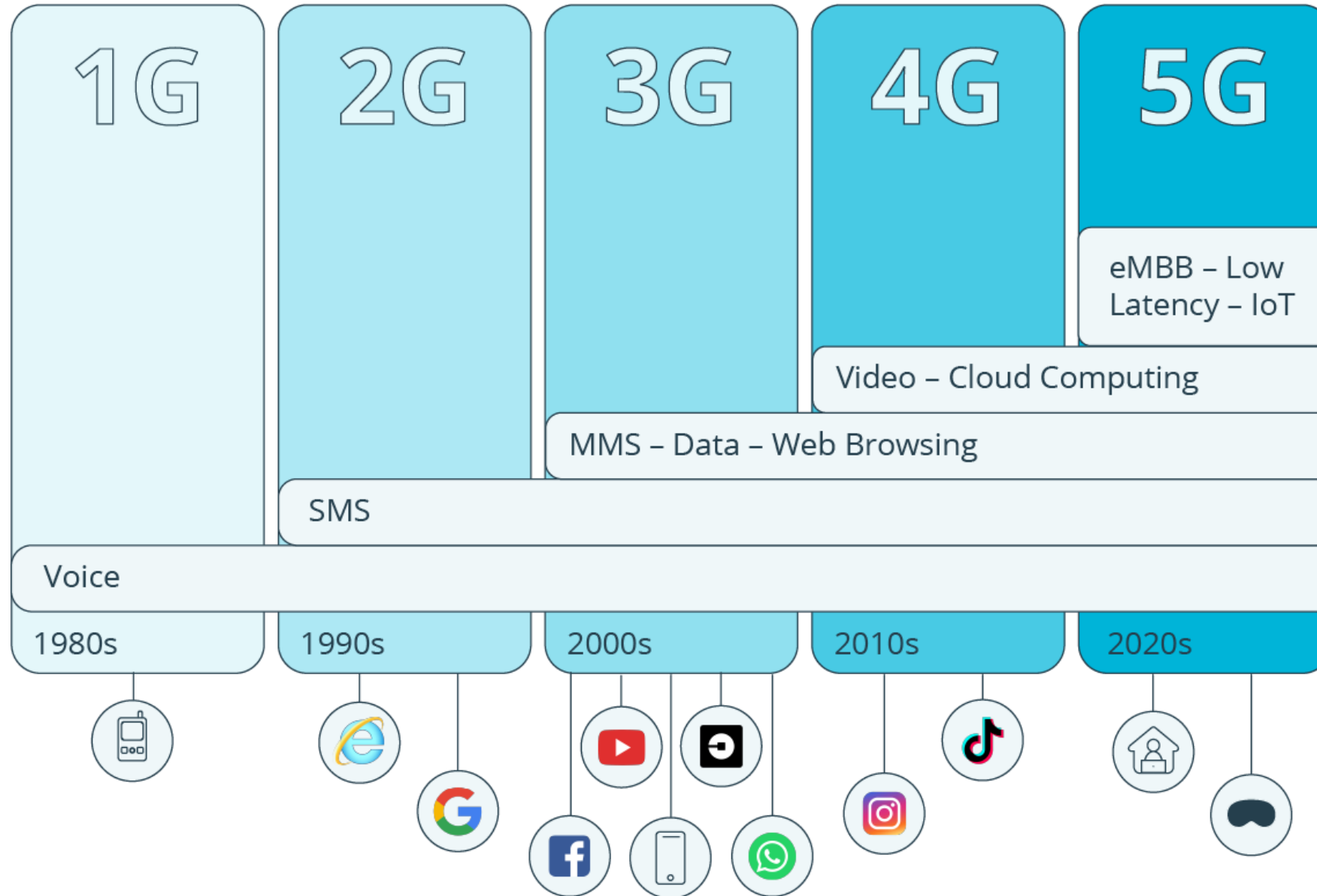
Area

> 4 millions km²

Population
> 100 millions

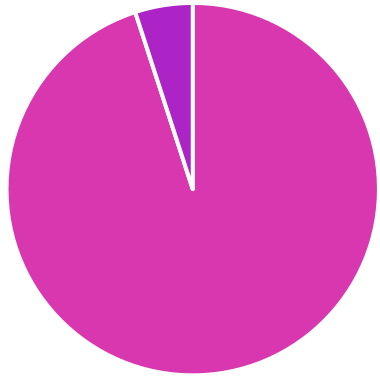


Mobile Communications Evolution

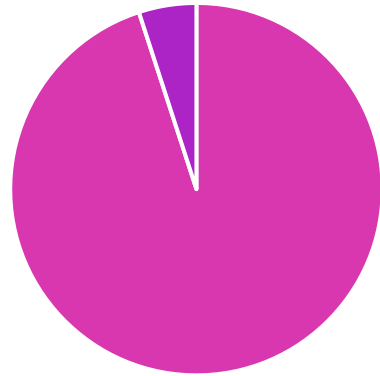




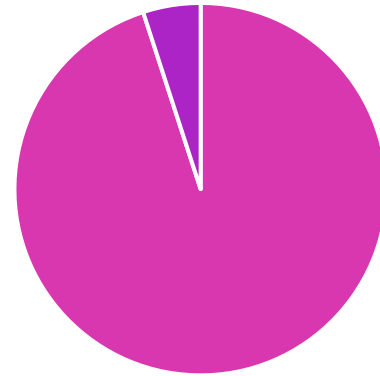
Connectivity
a fundamental human right
&
a critical economic driver



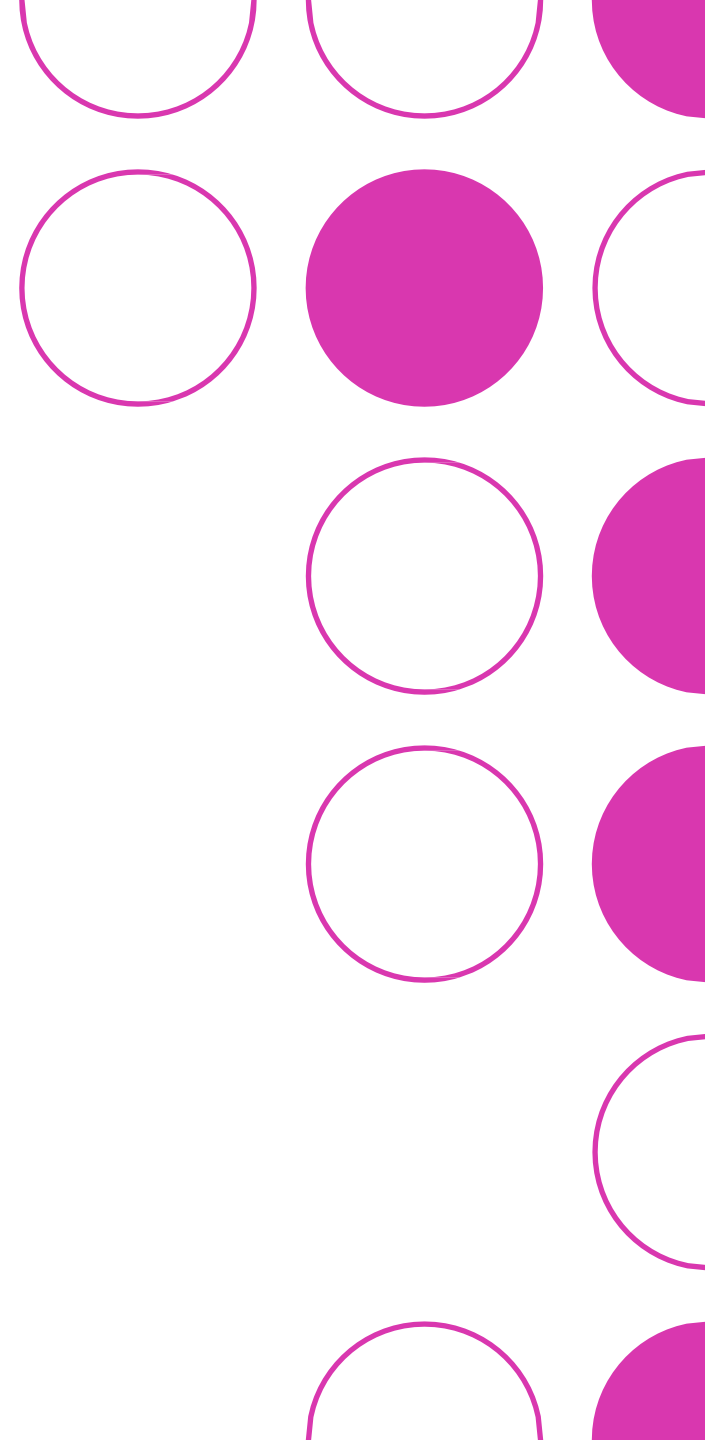
95%
of population

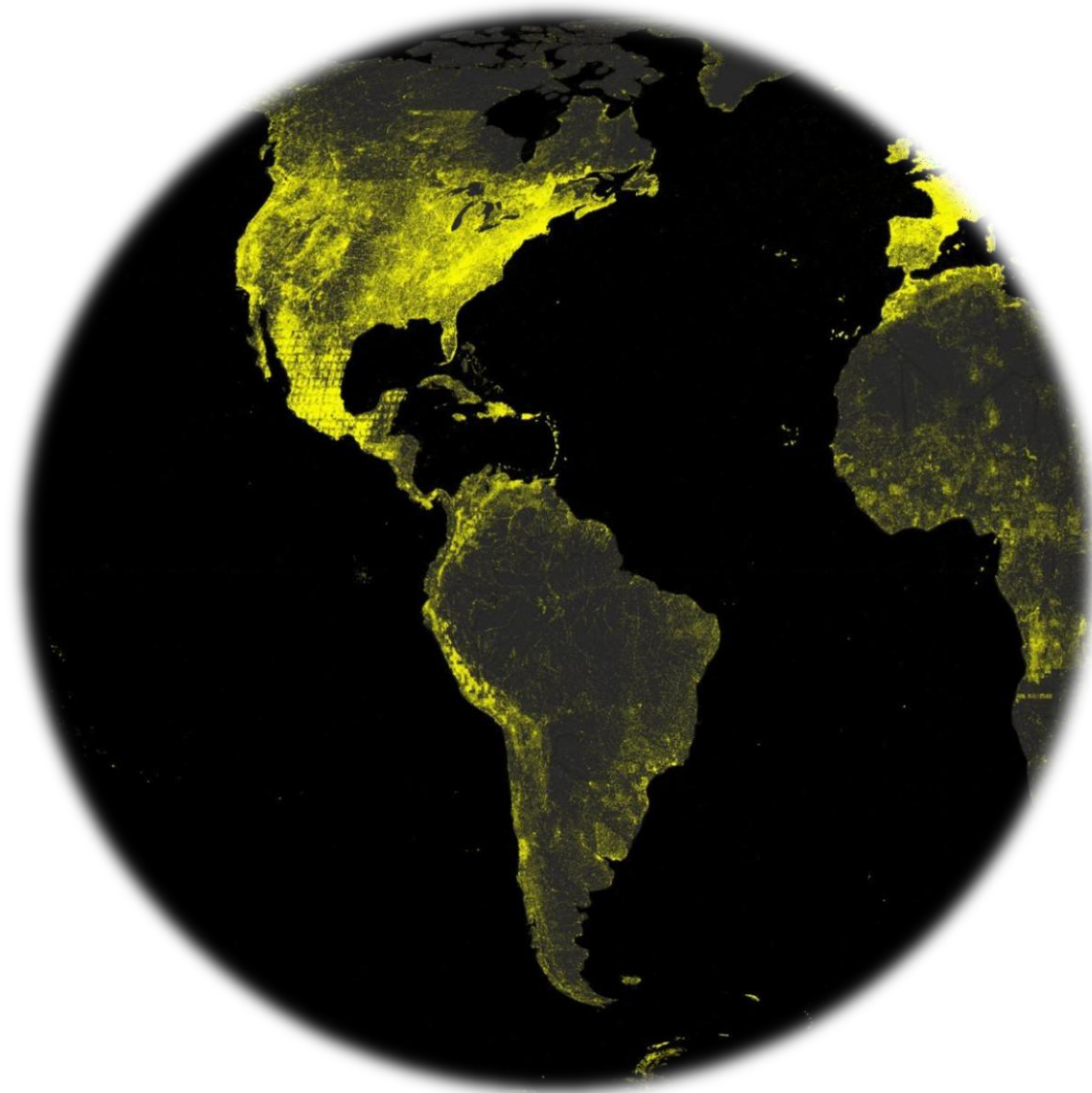


95%
of the time



95%
of use cases





10 Use Cases to transform Brazil via 6G

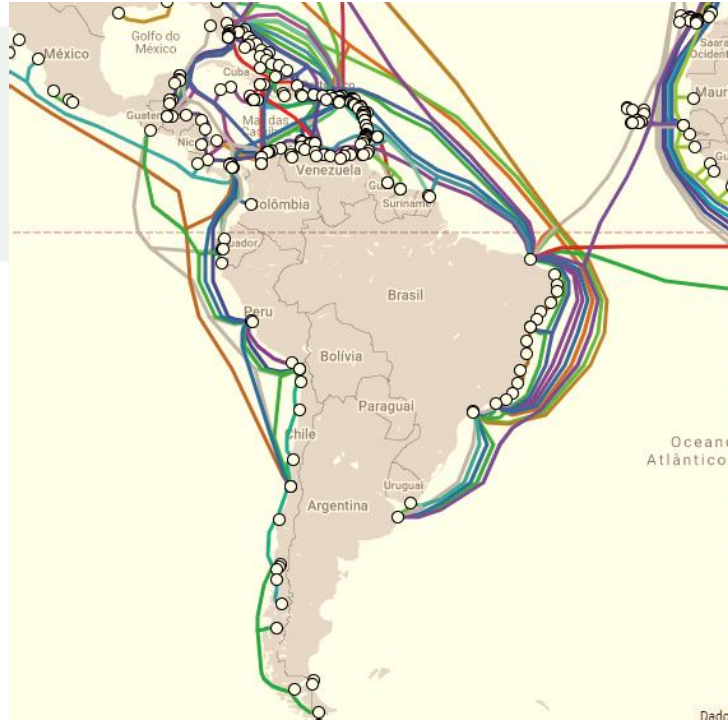


1

Universal Coverage for Roads, Rural and Remote Areas

2

Zero-carbon Datacenters





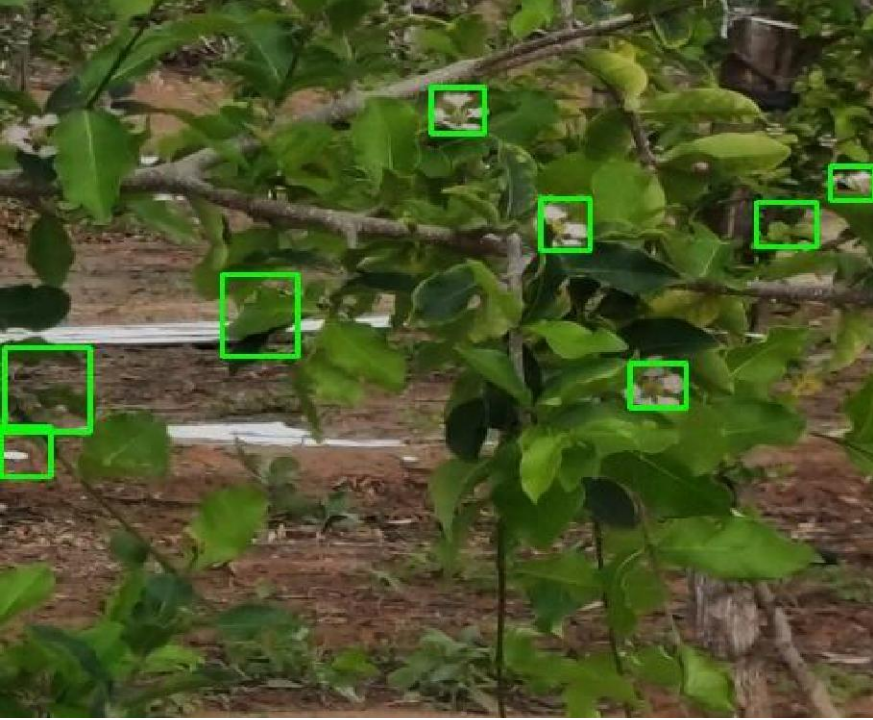
3

Public Safety



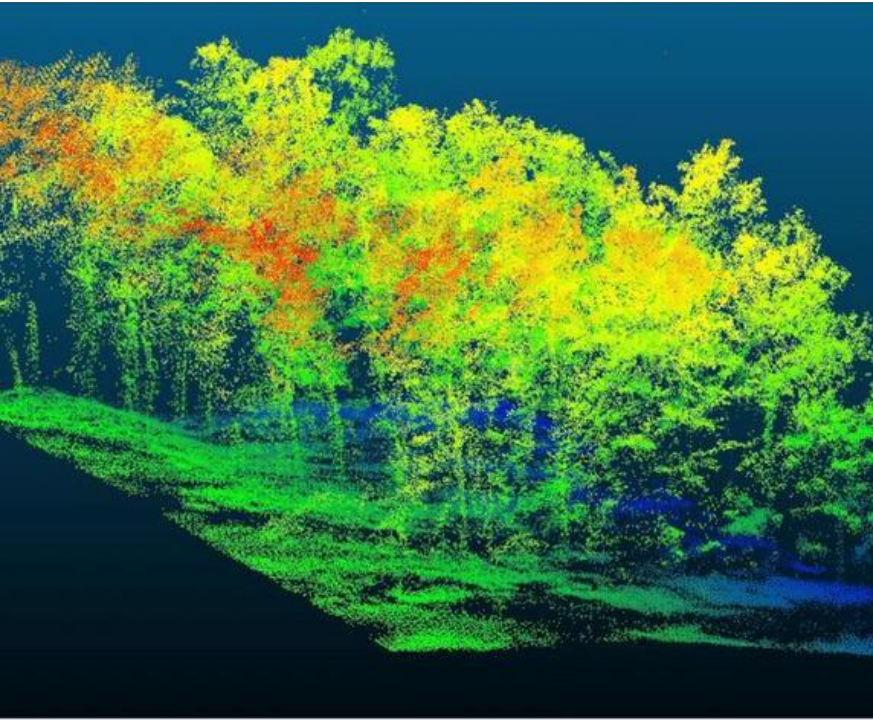
4

Private Networks for Industry 4.0



5

e-Farming



6

The 6th Sense - Sensing Objects & the Environment



7

Water Management

Smart Meters &

Real-time Control



8

Energy Distribution

Smart Meters &

Smart Grids





9

Next Gen ADAS & Fleet Management in Road Transportation



10

Mobile TV Broadcasting



Thank you!



Rodrigo Cavalcanti
Federal University of Ceara
rodrigo@gtel.ufc.br

